3GPP TSG SA WG 4 Meeting #131-bis-e TDoc S4-250715

Online, 11th – 17th April 2025

**Title: LS on Avatar Security Aspects**

**Response to:**

**Release: Rel-19**

**Work Item: Avatar Communications in AR Calls (AvCall-MED)**

**Source: SA4**

**To: SA3**

**Cc: SA2**

**Contact person: Imed Bouazizi**

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**Send any reply LS to: 3GPP Liaisons Coordinator,** **mailto:3GPPLiaison@etsi.org**

**Attachments:** None

# 1 Overall description

SA4 is currently developing avatar communication enhancements within Augmented Reality (AR) calls under the Release 19 AvCall-MED work item. This work item will enable users participating in a call to offer their 2D and 3D avatars to and receive the avatars of the other participants and animate them in real-time. A user may use external tools to generate their base avatar and then make it available through the Base Avatar Repository (BAR) to other participants of a call. A base avatar is a container that stores several avatar assets (e.g., head, body, clothes, glasses, and other digital assets) in a way that allows the receiver to animate them using animation streams sent by a sending UE. During an AR call, only a subset of the assets that are stored in the base avatar container may be made available to the other call participants. Access should also be limited to the time duration of the AR call, e.g., through usage of DRM licenses. As specified in TS 23.228, base avatars are identified by an Avatar ID

A crucial part of this effort involves several security considerations, for which SA4 seeks support and collaboration from SA3. Specifically, SA4 has identified the following security aspects requiring attention from SA3:

1. For IMS-based avatar calls:
	* Proper authentication of the user at the start of and during an avatar call for retrieving base avatars:
		+ Avatar ID management, enabling users to obtain Avatar ID(s) from BAR as well as to verify the ID(s) with the associated user, by the network and network identifiers e.g. SUPI/GPI/PEI.
		+ The selection and access of base avatars and assets have to typically be performed at the start of an AR call but the user may be allowed to add or swap assets (e.g. change their outfit during a call).
		+ Access management during AR calls, allowing users precise control to grant temporary access limited to specific avatar assets for the duration of the AR call to authenticated call participants.
2. For avatar management sessions:
	* Proper authentication of the user for the creation and management of their associated base avatars, and secure management for base avatars.
	* enabling users to manage their base avatars in the BAR (this is not during an IMS avatar call). Such a session may be used for uploading and updating the base avatar models and associated assets of the user. SA4 is considering two mechanisms for such an avatar upload/management session:
		+ Through an operator provided application.
		+ Through a direct interface between the UE and BAR (a non-IMS API).
3. Protection mechanisms for avatar assets within a Base Avatar Model, to ensure protection of base avatar assets and components through proper encryption and DRM mechanisms. SA4 will define the container format for such base avatar, which stores avatar assets.

SA4 anticipates collaborating closely with SA3 to address these security requirements properly and looks forward to your support and expert insights. Given the stage 3 freezing date for release 19, SA4 would like to kindly request prompt action on these topics. SA4 will share the necessary details about the base avatar format upon selection, which is expected in the SA4#132 meeting.

# 2 Actions

**To SA3**

**ACTION:** SA4 kindly asks SA3 to provide guidance and potential solutions to address the above-mentioned security aspects and needs as part of their Rel-19 specifications.

# 3 Dates of next TSG SA WG 4 meetings

SA4 #132 19 – 23 May 2025 Fukuoka City, Japan

SA4 #133-e 21 – 25 July 2025 Online